EVALUATION OF NEW TECHNOLOGIES OF HR FUNCTIONS IN SELECTED INDIAN ORGANIZATION

SANA KHAN[1], DR. VINOD KUMAR BHATNAGAR[2] & DR. VIPIN KUMAR BANSAL[3]

[1]Research Scholar, Jiwaji University, Gwalior, Madhya Pradesh, India

[2]Head & Associate Professor IPS College of Technology and Management, Gwalior, Madhya Pradesh, India

[3]Professor in Commerce Govt. K.R.G. P.G. Autonomous College, Gwalior, Madhya Pradesh, India

ABSTRACT

Purpose- The purpose of this paper was to identify the significant effect of age, gender, academic qualification on human resource information systems, artificial intelligence, and e-human resources and to identify the significant effect of human resource information systems, artificial intelligence on e-human resources.

Methodology- The study was causal in nature and a survey method was used. Employees from top-level, middle level and lower level of managers/executives from the manufacturing and service Sector were used as a sampling frame and individual respondent was used as sampling element. The valid sample size for research was 407. A self-designed questionnaire was used for data collection. Independent t-test and linear regression were used as a tool for data analysis.

Findings- Questionnaire was highly reliable and Data was normally distributed. Independent t-test showed that male and female employees were not equally motivated by human resource information systems, age groups were not equally motivated by human resource information systems and qualified employees were equally motivated by human resource information systems. 'R square' value represents the 51.8% variance explained between e-human resource and human resource information system and 68.7% variance explained between e-human resource and artificial intelligence. F value (435.821) at 0.000% degree of significance indicates excellent model fit from the table of ANOVA. F value (889.705), at 0.000% degree of significance, indicates a good model fit from the table of ANOVA.

Result- There is no significant impact of New Technology of HR Functions like Human Resource Information System on E- Human Resource and no significant impact of New Technology of HR Functions like artificial intelligence on E- Human Resource.

KEYWORDS: New Technologies of HR, Human Resource Information System (HRIS) & Artificial Intelligence (AI)

Original Article

INTRODUCTION

Human Resource Information System is a software tool that is used by the HR departments of various organizations for the entry tracking and management of human resource operations data. Since all the organizations are in the state of digital flux HR departments need to adapt to the technological changes that are going around maintaining the pace of development.

HRIS is an umbrella term which contains a wide range of systems within itself. It includes employee database and directory, payroll, work schedule, time sheet, reports, employee self service etc. HRIS cannot be considered only as a hardware system but it also contains various data information's policies and procedures. The HR manager is in charge of taking care of all the issues of each and every employee as well as the management of

the organization. The HR department is full of various activities. It needs to keep a record of all the activities being performed in the organization and for this purpose, a robust information system is necessary for the organization. Many factors are responsible for the digitalization of the HR department. Such systems have a great contribution in the accomplishment of chores such as intricacy and magnitude of the emolument structure, complexity of professional elucidation and designation, corporate structure and diverse factory locations, the intricacy of legitimate and rightful exigencies, modifications that are being done, upsurge in the number, prominence and intensity of expertise of the employees and the massive amount of Human Resource data which needs to be determined, arranged, made clear of and passed down. The Human Resource Information System caters information for planning, controlling, decision making and preparation of reports to the HR manager. The HR manager must develop a clear cognizance of the worth and importance of record keeping staff function to the fundamental and managerial functions. Human resources particulars and knowledge have been transformed into as many business processes as possible and making them easily available and obtainable to the line managers, top management team, government organizations and employees. This procedure has caused a curtailment in time in terms of the standard administrative tasks and reduction of the number of positions, which were needed formerly to perform various tasks related to human resources. HRIS is a software program that helps to automate HR functions and reduce the workload of HR officials by removing the cumbersome paper work and recurring tasks. HRIS helps both the managers and the employees to manage the workflow and produce optimum results. There are 3 key applications of HRIS they are core HR, Managing workforce, and Strategic HR. Core HR includes all the basic HR functions such as recruitment selection, employee data processing, payroll, etc. The managing workforce includes performance appraisal, training and development leave management, etc. Strategic HR includes providing data analysis for strategic decision-making.

REVIEW OF LITERATURE

A research conducted by Persian & Khandija (2006) narrates the influence of the human resources management functions in attaining organizational change at The Sultanate of Oman central ministries. The research found that there are optimistic results for these posts on accomplishing organizational change. The study proposed the activation of human resource management and increasing reliance on them. A research conducted by Al-kharabsheh (2010) focused to recognize the influence of managerial policies on human resource effectiveness in Jordanian public institutions from the opinion of managers and recognizing the elements and efficacious practices magnifying human resources effectiveness. The study analyzed that there are effective channels for human resources within public Jordanian institutions. Research conducted by Mohammad and Haroon Tarawneh (2012) focused to exhibit the influence of the usefulness of the usage of Human Resources Management System in corporate accomplishment keeping the approach of workers in the Banking Sector in Jordanian Firm, The research found a set of solutions which stated that there is a remarkable outcome between the standard of the output of human resources information system and institutional accomplishment in the banking sector in the Jordanian firm. A study conducted by Ms. Magdalene Peter (2015) on the HRIS level within the HR department ascertained the performance criteria of HRIS function and its effect on the performance of the HR department functions related to time and quality. A great majority of the survey respondents said that HRIS was used mainly for managerial purposes like a traditional support role. A study conducted by Aye Chan Khin (2019 to understand the consequences of the human resource information system on productivity showed that the reduction of errors on HRIS improved the quality of service. HRIS improves HR performance and enhances productivity. There are some papers that show the implementation of HRIS had improved communication and awareness of employees about their jobs. By providing employees with up to date information regarding their roles and activities with the organization, it enhances employee engagement and

communication furthermore, employee performance was improved because they were aware of the assigned tasks and rules at all times. The researcher may conclude that the measure of the efficiency of output is called productivity. An explorative empirical research on Electronic HRM by Ruel, Bondarouk and Looise (2004) was performed with five large companies on web-based e-HRM. The review of literature drew conclusions regarding E-HRM goals firstly improvising the strategic adaptation of HRM. Secondly increased efficiency and reduced cost and thirdly improving the services provided to the client as well as facilitating management and employees. A research conducted by Sabrina Jahan in (2014) concludes that HRIS is one of the major modern HR tools. In developed countries, it became popular since the start of this century. Bangladeshi corporate organizations have started the implementation of HRIS lately. Still, its implementation is limited within the vicinity of big corporate structures. Small scale corporate houses and public companies couldn't realize the benefits of HRIS. They have hardly taken any initiative to implement the system. The major barrier to the success of HRIS is the lack of management commitment.

OBJECTIVES

The main objectives of the Study were

- To identify the significant effect of age, gender, academic qualification on human resource information systems, artificial intelligence, and e-human resources.

- To identify the significant effect of human resource information systems, artificial intelligence on e-human resources.

Hypotheses of the Study

$H_0 1$ There is no impact of human resource information systems on age groups, gender, and academic qualification.

$H_0 2$ There is no impact of artificial intelligence on age groups, gender, and academic qualification.

$H_0 3$ There is no impact of human resource information systems and artificial intelligence on e-human resources.

RESEARCH METHODOLOGY

The study was causal in nature and the survey method was used for data collection. Human Resource Information System and Artificial intelligence were used as independent variables and E-Human Resource was used as dependent variable. In the present research, primary data was collected through questionnaires. Target population includes the employees from manufacturing as well as service organizations like FMCG Co., IT Co., Health Care Sector, and Banking sector.

Sampling Frame

The study was conducted through personal contact by the researcher with the respondents, therefore, the sample frame for the study include the Employee like top level, middle level and lower level of managers/executives from manufacturing as well as service organizations like FMCG Co., IT Co., Health Care Sector, and Banking sector.

Sampling Elements

Individual Respondent was the sampling element of study.

Sampling Techniques

A non-Probability purposive sampling technique was used to identify the respondents for the purpose of study.

Sample Size

For this study questionnaires were sent via various channels like email, speed post, personal meeting, etc. A total of 445 questionnaires had a proper response and after the removal of some outliers, only 407 respondents were left. Hence the valid sample size for this research was 407.

Tools Used for Data Collection

Self-designed questionnaire based on the extensive survey of literature were prepared after discussion by the practitioners in the relevant area, separate measure were developed to measure both the set of variables, i.e. human resource information system, artificial intelligence and e-human resource. The responses were collected on a likert type scale 1 to 5 for all the variables. Content validity of both measures was established through a panel of 6 judges before using the measure for collecting data for the study.

Tools Used for Data Analysis

Independent t-test was applied to evaluate the mean differences of gender, age groups, academic qualification, towards human resource information system, artificial intelligence, and e-human resource and linear regression analysis was applied to evaluate the relationship between human resource information system, artificial intelligence, and e-human resource variables.

Secondary Data Sources

Secondary data was collected through various authentic literature print material as well as web material like books, journals, published and unpublished thesis and dissertation, government or corporate reports, newspaper, magazines, websites etc.

DATA ANALYSIS

Reliability & Normality Measurement for New Technology of HR Functions (Human Resource Information System, Artificial Intelligence) and E-Human Resource

There are many tools available for reliability measurement but the Cronbach's alpha is a very popular tool, and many researchers use such reliability measurement. If the value of reliability is found greater than 0.7, declare that the test questionnaire is good. The methods used for normality are known as the KS-test and Shapiro-Wilk. If the obtained 'P' value of the KS-test is found to be insignificant it means that the data is normally distributed (P>0.05) and if the value is found to be significant then the data is not normally distributed.

Table 1

Reliability Statistics		Values of Normality Measurement			
		Kolmogorov-Smirnov		Shapiro-Wilk	
Cronbach's Alpha	N of Items	Statistic	Sig.	Statistic	Sig.
.912	20	.623	.088	.792	.119
.889	25	.612	.147	.660	.111
.875	25	.572	.057	.825	.100
Results: *Questionnaire was highly reliable*		Results: *Data was normally distributed*			

The value of Cronbach's alpha obtained as per the table shown above is 0.912 for 20 questions of human resource information system, 0.889 for 25 questions of artificial intelligence and 0.875 for 25 questions of electronic-human resource. These obtained values of all statements were much higher than the standard value of Cronbach's alpha, indicating that the questionnaire of all are reliable and provides all the information that we want to obtain from the data side. Similarly, obtain insignificant value of all indicating the data were normally distributed.

Independent Sample T-test between various demographic and Human Resource Information System

The t-test was applied to detect significant differences of mean between perceptions of two different demographics for the human resource information system.

Independent Sample T-test between Gender and Human Resource Information System

This independent sample t-test was applied to find the significant mean difference between the two different genders' perceptions towards human resource information systems by taking the sum of both. The test variable or dependent variable in this analysis is the human resource information system and the grouping variable is male & female (gender).

This independent sample t-test was applied to find the significant mean difference between the two different age groups' perceptions towards human resource information systems by taking the sum of both. The test variable or dependent variable in this analysis is the human resource information system and the grouping variable is 20 Years - 40 Years & 41 Years - 60 Years old employees under age groups.

This independent sample t-test was applied to find the significant mean difference between the perceptions of two different academic qualifications towards human resource information systems by taking the sum of both. The test variable or dependent variable in this analysis is the human resource information system and the grouping variable were less qualified (Up to Graduation) and Post-Graduation & Above (Highly qualified) under academic qualification.

Main Null Hypothesis

$H_01.$ There is no similar impact of human resource information system on male and female employees'.

$H_02.$ There is no similar impact of human resource information system on 20 Years - 40 Years & 41 Years - 60 Years old employees under age groups.

$H_01.$ There is no similar impact of human resource information system on up to Graduation and Post-Graduation & Above employees

Table 2

Group Statistics				Independent Samples Test					
				Levene's Test for Equality of Variances			t-test for Equality of Means		Null Status
Dependent Variable	Grouping Variable (Gender)	Std. Deviation	Std. Error Mean	F	Sig.	Equal Variance	t	Sig. (2-tailed)	
Human Resource Information System	Male	13.92640	.91235	2.496	.115	Assumed	.111	.911	Accepted
	Female	11.95263	.90613						
	20 Years - 40 Years	13.23908	.79980	.009	.924	Assumed	.333	.739	Accepted
	41 Years - 60 Years	12.86420	1.11547						
	Up to Graduation	14.11141	.97845	8.713	.003	Not Assumed	2.079	.038	Rejected
	Post-Graduation & Above	11.84122	.83940						

Table of t-test (independent samples) performed Levene's test for equality of variances to verify whether equal variances were assumed or not and obtain the value of 'F' i.e. 2.496 which was an insignificant level of 0.115 (P>0.05), declare that equal variances are assumed. The obtained value of 'T' is 0.111 which is insignificant at 0.911 levels of significance. This means that there is no significant impact of the human resource information system on male and female employees. It also means that male and female employees are not equally motivated by human resource information systems. Hence the null *hypothesis is proved or accepted* by the result.

Table of t-test (independent samples) performed Levene's test for equality of variances to verify whether equal variances were assumed or not and obtain the value of 'F' i.e. 0.009 which was an insignificant level of 0.924 (P>0.05), declare that equal variances are assumed. The obtained value of 'T' is 0.333 which is insignificant at 0.739 levels of significance. This means that there is a significant and similar impact of human resource information system on 20 Years - 40 Years & 41 Years - 60 Years old employees under age groups it also means that 20 Years - 40 Years & 41 Years - 60 Years old employees under age groups are not equally motivated by human resource information system. Hence the null *hypothesis is proved or accepted* by the result.

Table of t-test (independent samples) performed Levene's test for equality of variances to verify whether equal variances were assumed or not and obtain value of 'F' i.e. 8.713 which was significant at level of 0.003 (P<0.05), declare that equal variances are not assumed. The obtained value of 'T' is 2.079 which is also significant at 0.038 levels of significance. This means that there is significant and similar impact of human resource information system on less qualified (Up to Graduation) and Post-Graduation & Above (Highly qualified) under academic qualification of employee it also means that both types of qualified employees are equally motivated by human resource information system. Hence the null *hypothesis is not proved or Rejected* by the result.

Independent Sample T-Test between Gender and Artificial Intelligence

This independent sample t-test was applied to find the significant mean difference between the two different Age groups, genders & qualifications towards artificial intelligence by taking the sum of both. The test variable or dependent variable in this analysis is the artificial intelligence and the grouping variable is male & female (gender), grouping variable is 20 Years - 40 Years & 41 Years - 60 Years old employees under age groups and the grouping variable were less qualified (Up to

Graduation) and Post-Graduation & Above (Highly qualified) under academic qualification.

Main Null Hypothesis

$H_01.$ There is no similar impact of artificial intelligence on male and female employees'.

$H_02.$ There is no similar impact of artificial intelligence on 20 Years - 40 Years & 41 Years - 60 Years old employees under age groups.

$H_01.$ There is no similar impact of artificial intelligence on less qualified (Up to Graduation) and Post-Graduation & Above (Highly qualified) under academic qualification.

Table 3

Group Statistics				Independent Samples Test					
				Levene's Test for Equality of Variances			t-test for Equality of Means		Null Status
Dependent Variable	Grouping Variable (Gender)	Std. Deviation	Std. Error Mean	F	Sig.	Equal Variance	t	Sig. (2-tailed)	
Artificial intelligence	Male	13.80165	.90418	8.590	.004	Not Assumed	1.554	.121	Accepted
	Female	10.82995	.82102						
	20 Years - 40 Years	12.91377	.78015	.120	.730	Assumed	.244	.807	Accepted
	41 Years - 60 Years	12.10169	1.04935						
	Up to Graduation	13.52836	.93802	3.391	.066	Assumed	1.443	.150	Accepted
	Post-Graduation & Above	11.60191	.82244						

Table of t-test (independent samples) performed Levene's test for equality of variances to verify whether equal variances were assumed or not and obtain the value of 'F' i.e. 8.590 which was an insignificant level of 0.004 (P<0.05), declare that equal variances are not assumed. The obtained value of 'T' is 1.554 which is insignificant at 0.121 levels of significance. This means that there is a significant and similar impact of artificial intelligence on male and female, it also means that male and female employees are not equally motivated by artificial intelligence. Hence the null *hypothesis is proved or accepted* by the result.

Table of t-test (independent samples) performed Levene's test for equality of variances to verify whether equal variances were assumed or not and obtain value of 'F' i.e. 0.120 which was an insignificant level of 0.244 (P>0.05), declare that equal variances are assumed. The obtained value of 'T' is 0.244 which is insignificant at 0.807 levels of significance. This means that there is no significant and similar impact of artificial intelligence on 20 Years - 40 Years & 41 Years - 60 Years old employees under age groups, it also means that 20 Years - 40 Years & 41 Years - 60 Years old employees under age groups are not equally motivated by artificial intelligence. Hence the null *hypothesis is proved or accepted* by the result.

Table of t-test (independent samples) performed Levene's test for equality of variances to verify whether equal variances were assumed or not and obtain value of 'F' i.e. 3.391 which was significant at level of 0.066 (P<0.05), declare that equal variances are assumed. The obtained value of 'T' is 1.443 which is also significant at 0.150 levels of significance. This means that there is no significant and similar impact of artificial intelligence on less qualified (Up to Graduation) and

Post-Graduation & Above (Highly qualified) under the academic qualification of employees it also means that both types of qualified employees are not equally motivated by artificial intelligence. Hence the null *hypothesis is proved or Accepted* by the result.

Regression Analysis

Linear Regression between New Technology of HR Functions (Human Resource Information System, Artificial Intelligence) and Electronic Human Resource

Linear regression was calculated through statistical software (SPSS) obtained by sum of Human Resource Information System, artificial intelligence and E-Human Resource. In this analysis, Electronic Human Resource was dependent variable and Human Resource Information System and artificial intelligence are independent variables.

H_01: There is no significant impact of New Technology of HR Functions like Human Resource Information System on E- Human Resource.

H_02: There is no significant impact of New Technology of HR Functions like artificial intelligence on E- Human Resource.

Table 4

Variables		Model Summary		ANOVA		Coefficients		Null Status
Independent Variable	**Dependent Variable**	**R**	**R Square**	**F**	**Sig.**	**t**	**Sig.**	
Human Resource Information System	Electronic Human Resource	.720[a]	.518	435.821	.000	20.876	.000	Rejected
Human Resource Information System	Electronic Human Resource	.829	.687	889.705	.000	29.828	.000	Rejected

The computed 'R square' value 0.518 represents the 51.8% variance explained between e-human resource and human resource information system or 51.8% effect of human resource information system on e-human resources and obtain value of 'R' from the model summary table shows the high positive correlation between both variables summary. The computed 'R square' value 68.7% indicting that 68.7 percent variance explained between e-human resource and artificial intelligence or 68.7 percent effect of artificial intelligence on e-human resources and obtain value of 'R' from the model summary table shows the high positive correlation between both variables.

A value of F (435.821) at 0.000% degree of significance indicates excellent model fit from the table of ANOVA. A value of F (889.705), at 0.000% degree of significance, indicates a good model fit from the table of ANOV. The computed value of "t" from the coefficient table i.e. 20.876 which was 0.0% significant at the degree of significance represents the direct or positive impact of human resource information system on e-human resources in the manufacturing as well as service sector in India. The computed value of "t" from the coefficient table i.e. 29.828 which was also significant 0.000% at the degree of significance represents the direct or positive impact of artificial intelligence on e-human resources in the manufacturing as well as service sector in India.

CONCLUSIONS

After the analysis, it was found that the new technological methods in human resources such as Human Resource Information System and Artificial Intelligence were having a great impact on today's electronic human resources. The objectives of the study were to identify the significant effect of age, gender, academic qualification on human resource information systems, artificial intelligence, and e-human resources and to identify the significant effect of human resource information systems, artificial intelligence on e-human resources. We have applied an Independent t-test to evaluate the

mean differences of gender, age groups, academic qualification, towards human resource information systems, artificial intelligence, and e-human resource and linear regression analysis to evaluate the relationship between human resource information systems, artificial intelligence, and e-human resource variables. We found that the ***Questionnaire was highly reliable and Data was normally distributed. Results of the Independent t-test showed that*** male and female employees were not equally motivated by human resource information systems, age groups were not equally motivated by human resource information systems and qualified employees were equally motivated by human resource information systems. Regression analysis showed that the computed 'R square' value represents the 51.8% variance explained between e-human resource and human resource information system and 68.7% variance explained between e-human resource and artificial intelligence A value of F (435.821) at 0.000% degree of significance indicates excellent model fit from the table of ANOVA. A value of F (889.705), at 0.000% degree of significance, indicates a good model fit from the table of ANOVA. The computed value of "t" from the coefficient table i.e. 20.876 which was 0.000% significant at the degree of significance represents the direct or positive impact of human resource information systems on e-human resources in the manufacturing as well as service sector in India and the computed value of "t" from the coefficient table i.e. 29.828 which was also significant 0.000% at the degree of significance represents the direct or positive impact of artificial intelligence on e-human resources in the manufacturing as well as service sector in India. Therefore, we can conclude that null hypotheses H_01, H_02 were rejected by the results of regression analysis. There is no significant impact of New Technology of HR Functions like Human Resource Information System on E- Human Resource and no significant impact of New Technology of HR Functions like artificial intelligence on E- Human Resource.

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